ICR-120
BC-120W,E

SPECIFICATIONS

(ICR-120)

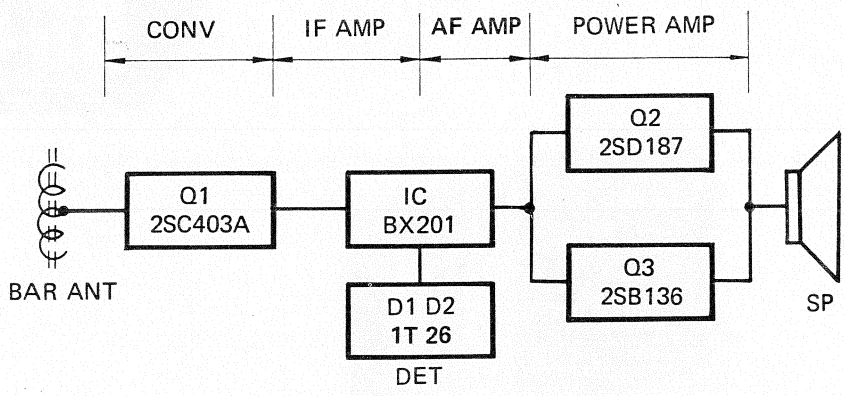
Circuit System :	1-IC 3-transistor 2-diode superheterodyne
Frequency Coverage :	530~1,605kHz (566~187m)
Intermediate Frequency :	455kHz
Antenna System :	Built-in ferrite bar antenna
Power Requirements :	Nickel cadmium battery 2.44V Rechargeable by using SONY battery charger BC-120W or BC-120E for house current
Power Output :	50mW (10% distortion) 65mW (maximum)
Current Drain :	8mA at zero signal, 30mA at 50mW output
Maximum Sensitivity :	500μV/m (at 10mW output)
Selectivity :	20dB, at 1,400kHz
Speaker :	1″ (2.6 cm) PM dynamic, 6.5Ω
Dimensions :	$1\frac{5}{16}$″ (W) X $1\frac{1}{4}$″ (H) X $\frac{11}{16}$″ (D) (50 mm X 31.2 mm X 18.3 mm)
Weight :	2.47oz (70g)

(BC-120W,E)

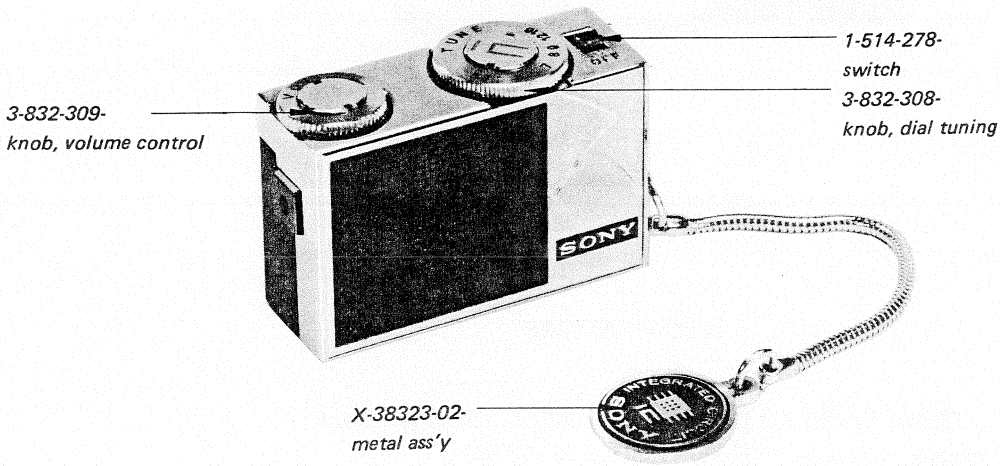
Input :	AC 117V for BC-120W (220V for BC-120E)
Output :	2.44V 14mA
Dimensions :	$1\frac{1}{2}$″(W)X$1\frac{1}{4}$″(H)X$1\frac{3}{4}$″(D) (38 mm X 32.5 mm X 44 mm)
Weight :	2.8 oz (80g)

SONY®
SERVICE MANUAL

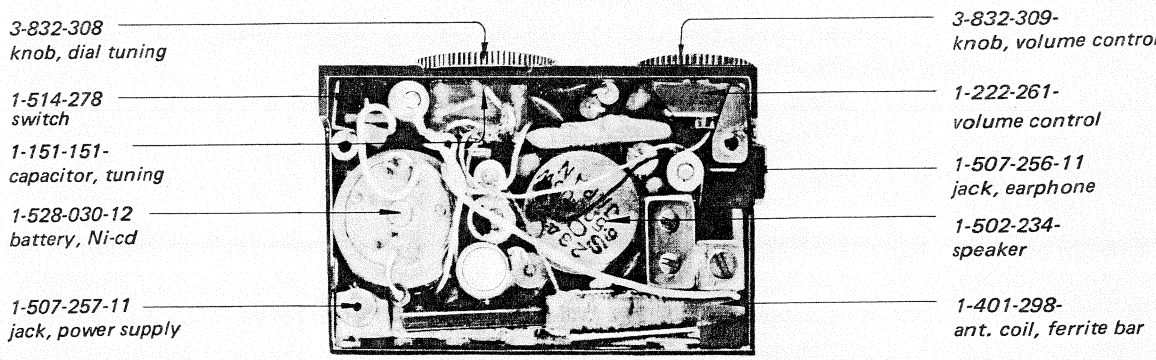
BLOCK DIAGRAM



EXTERNAL VIEW



INTERIOR VIEW



ICR-120
BC-120W,E

REAR CABINET REMOVAL

1. Remove the three screws marked with ○ in Fig.1.
2. Remove the rear cabinet in the direction shown by the arrow in Fig.1.

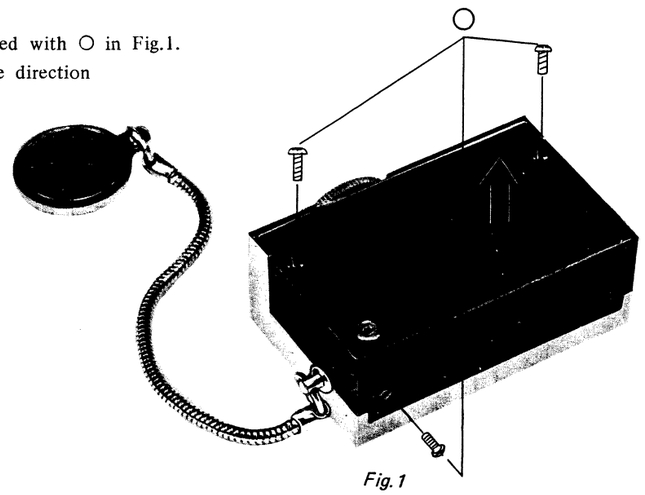


Fig. 1

CIRCUIT BOARD REMOVAL

1. Take out a battery.
2. Remove the circuit board in the direction shown by the arrow in Fig.2.

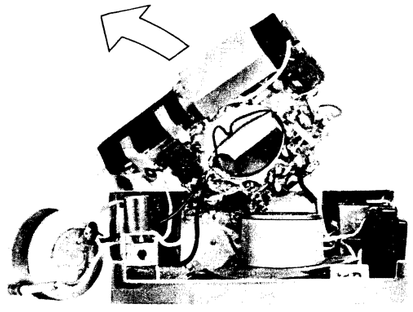


Fig.2

IF ALIGNMENT

Rf Signal Generator Connection	Rf Signal Generator Frequency	Adjust	Remarks
Loop antenna See Fig.3.	455 kHz (1,000Hz 30% a-m)	IFT	1. Turn the tuning capacitor to minimum capacitance position. 2. Adjust for maximum sound.

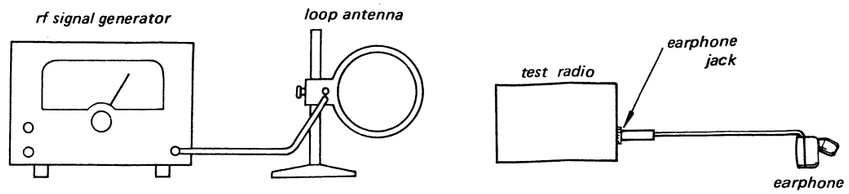


Fig.3 Alignment setup.

FREQUENCY COVERAGE AND TRACKING ADJUSTMENT

Adjusting Item	Rf Signal Generator Coupling	Rf Signal Generator Frequency	Receiver Dial Setting	Adjust	Remarks
Frequency Coverage	Loop antenna	520kHz (1,000Hz 30% a-m)	fully counterclockwise	osc. coil (L2)	VOL control: max Adjust for maximum sound.
		1,680kHz (1,000Hz 30% a-m)	fully clockwise	osc. trimmer (C2-2)	
Tracking	–ditto–	620kHz (1,000Hz 30% a-m)	tune to 620 kHz signal	ant. coil (L1)	–ditto–
		1,400kHz (1,000Hz 30% a-m)	tune to 1,400 kHz signal	ant. trimmer (C2-1)	

BATTERY CHARGER (BC-120W, E)

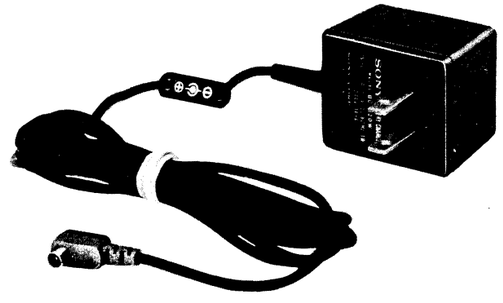
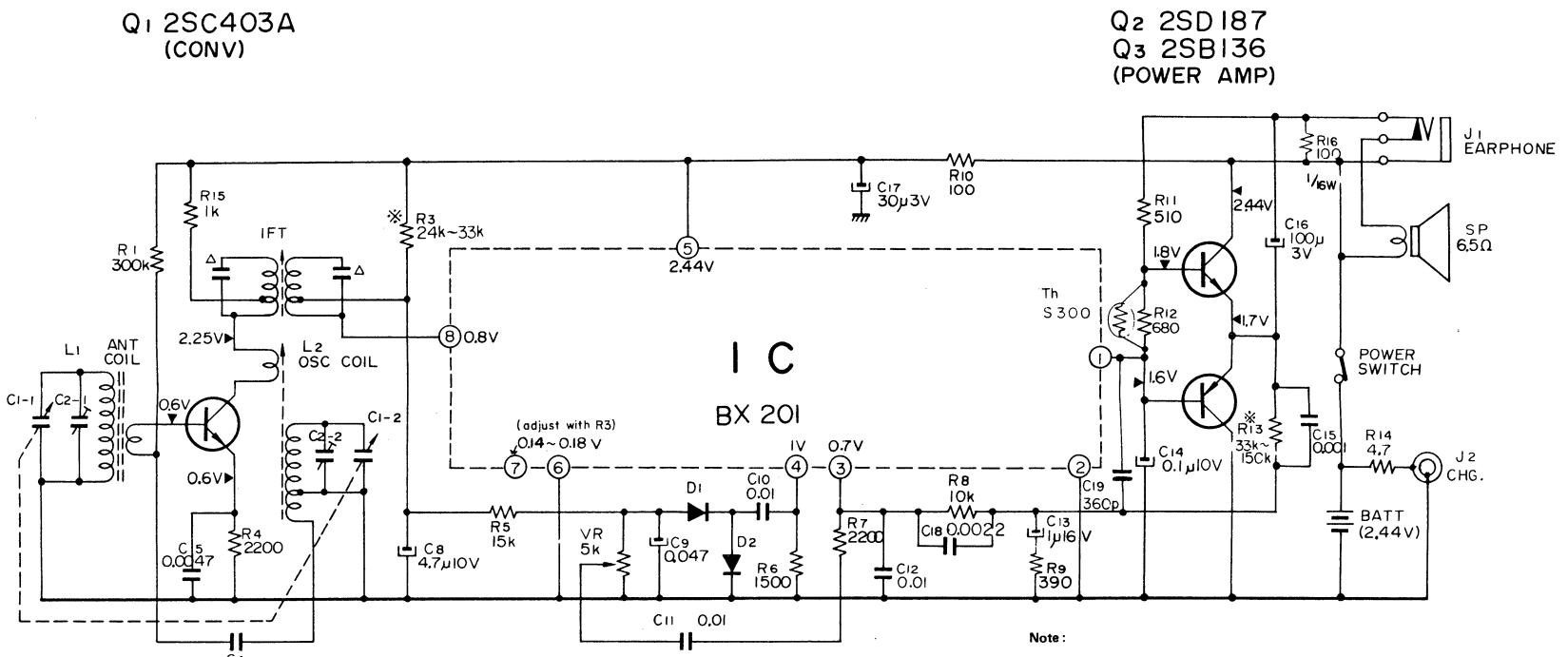


Fig.4 Appearance

Parts No : Y-38326-01-1 (BC-120W)
Y-38326-11-1 (BC-120E)
Input : ac 117V 60Hz (BC-120W)
ac 220V 50/60Hz (BC-120E)
Output : DC 2.44V, 14mA

Note : The battery charger is unserviceable due to sealed case.

SCHEMATIC DIAGRAM

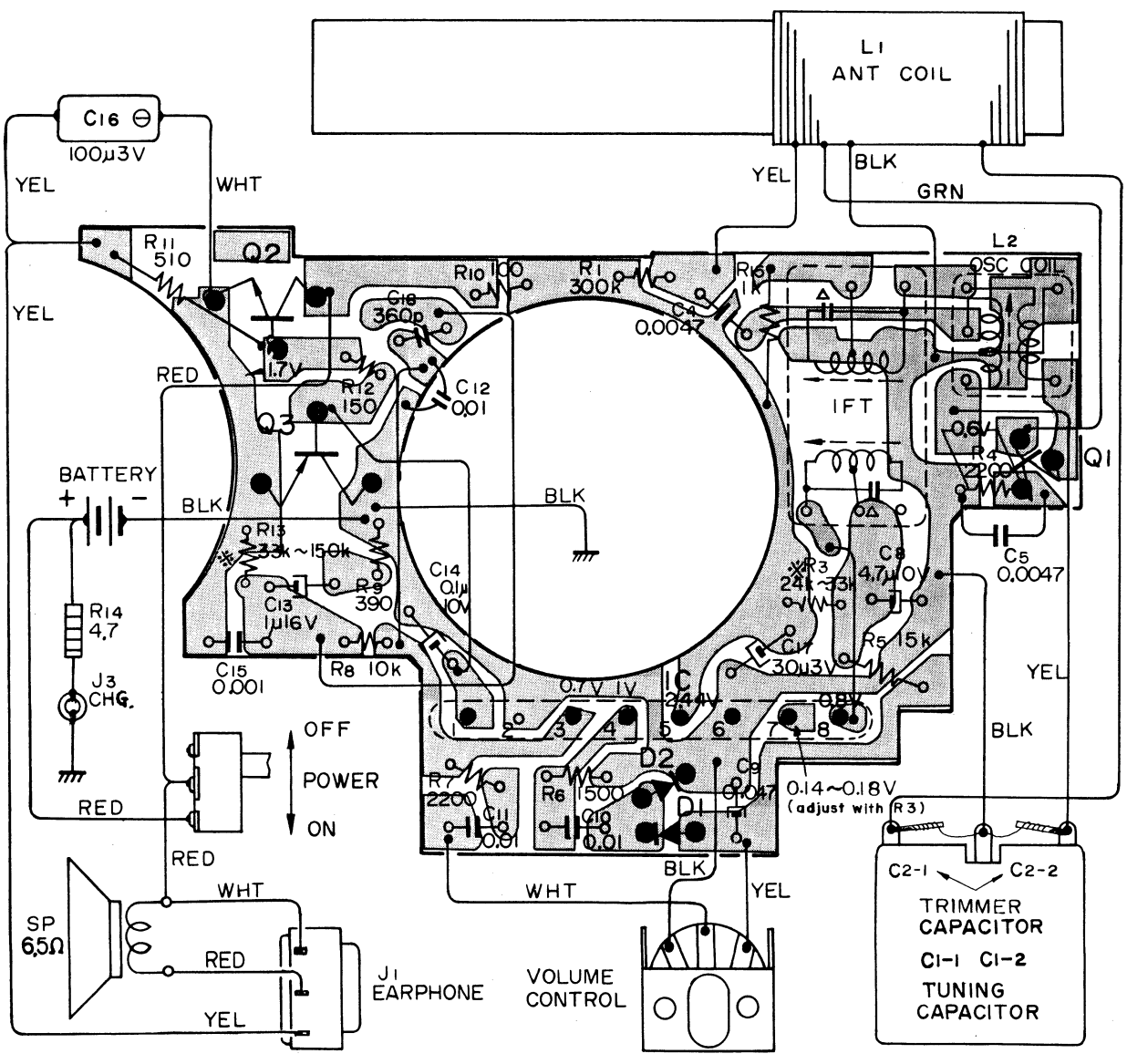


Note :

1. All resistors and capacitors are in Ω and μF, unless otherwise indicated.
2. Capacitor marked with Δ is built in i-f transformer.
3. Resistor marked with ※ is selected in value.
4. Voltage value is measured to ground circuit with a dc voltmeter (20 kΩ/V) with no radio signal received.
   Variations may be noted due to normal production tolerances.

MOUNTING DIAGRAM

—Conductor Side—

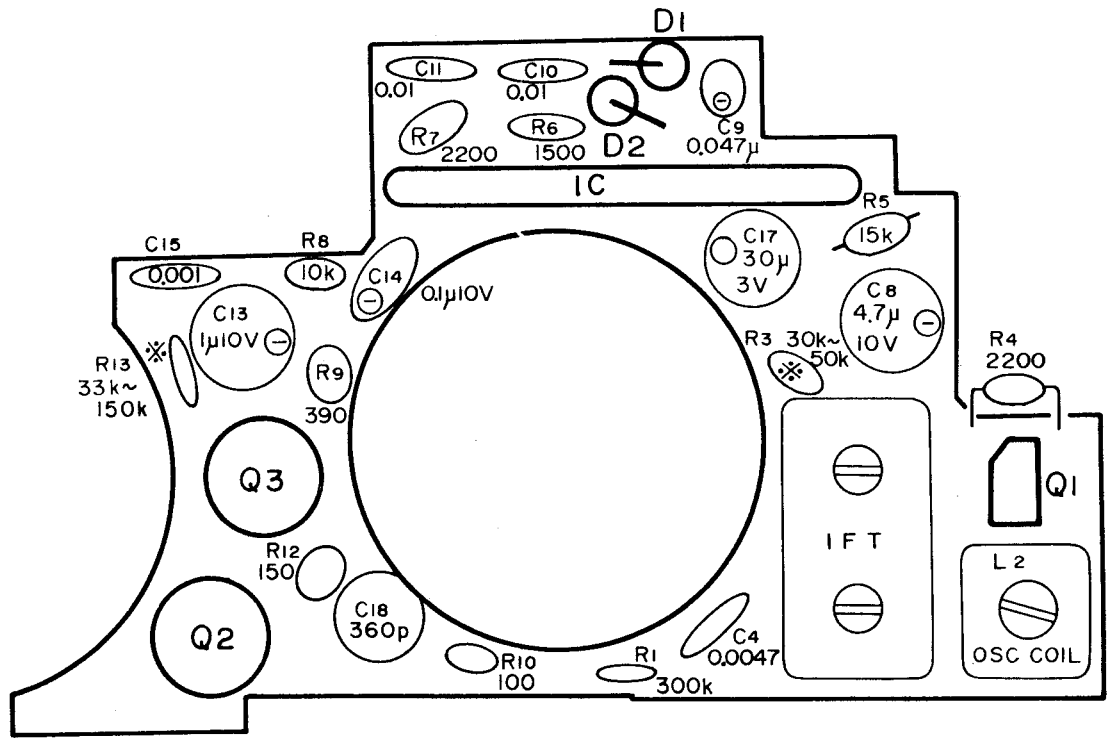


Printed circuit board
Part No. 1-539-188-11

R11,15 and C5,12 : mounted on the conductor side

MOUNTING DIAGRAM

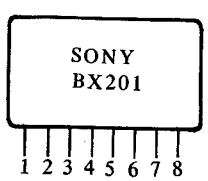
–Component Side–



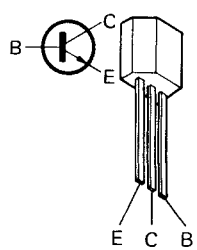
Printed circuit board
Part No. 1-539-188-11

R11,15 and C5,12 : mounted on the conductor side

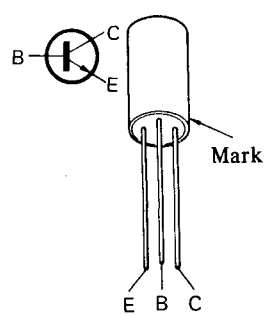
IC



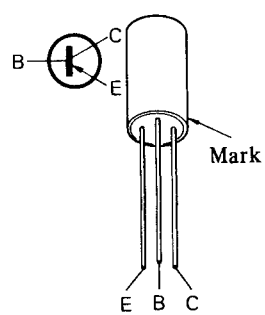
Q1 2SC403A



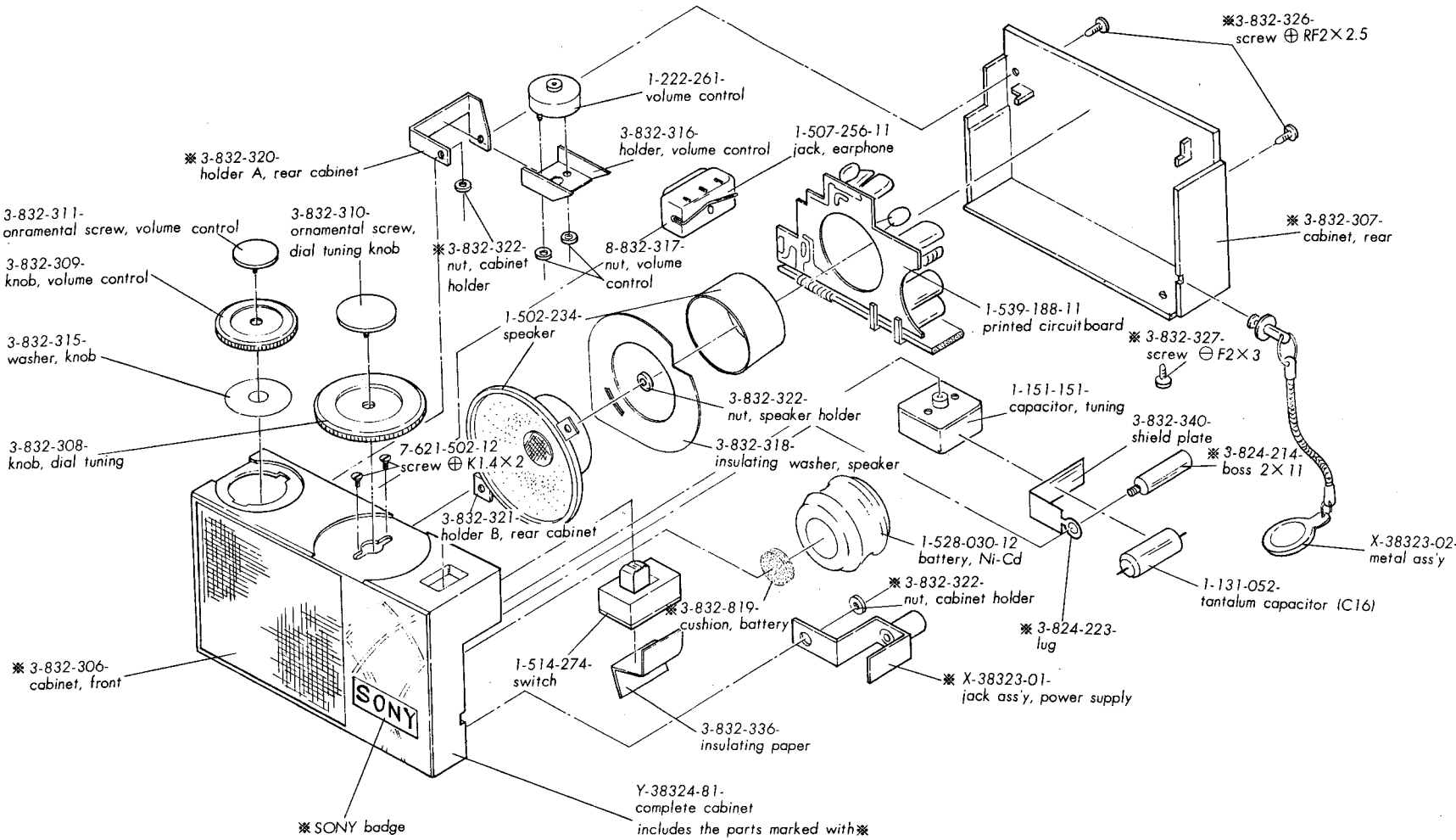
Q2 2SD187



Q3 2SB136



EXPLODED VIEW



Note: Parts marked with ※ are included in complete cabinet.

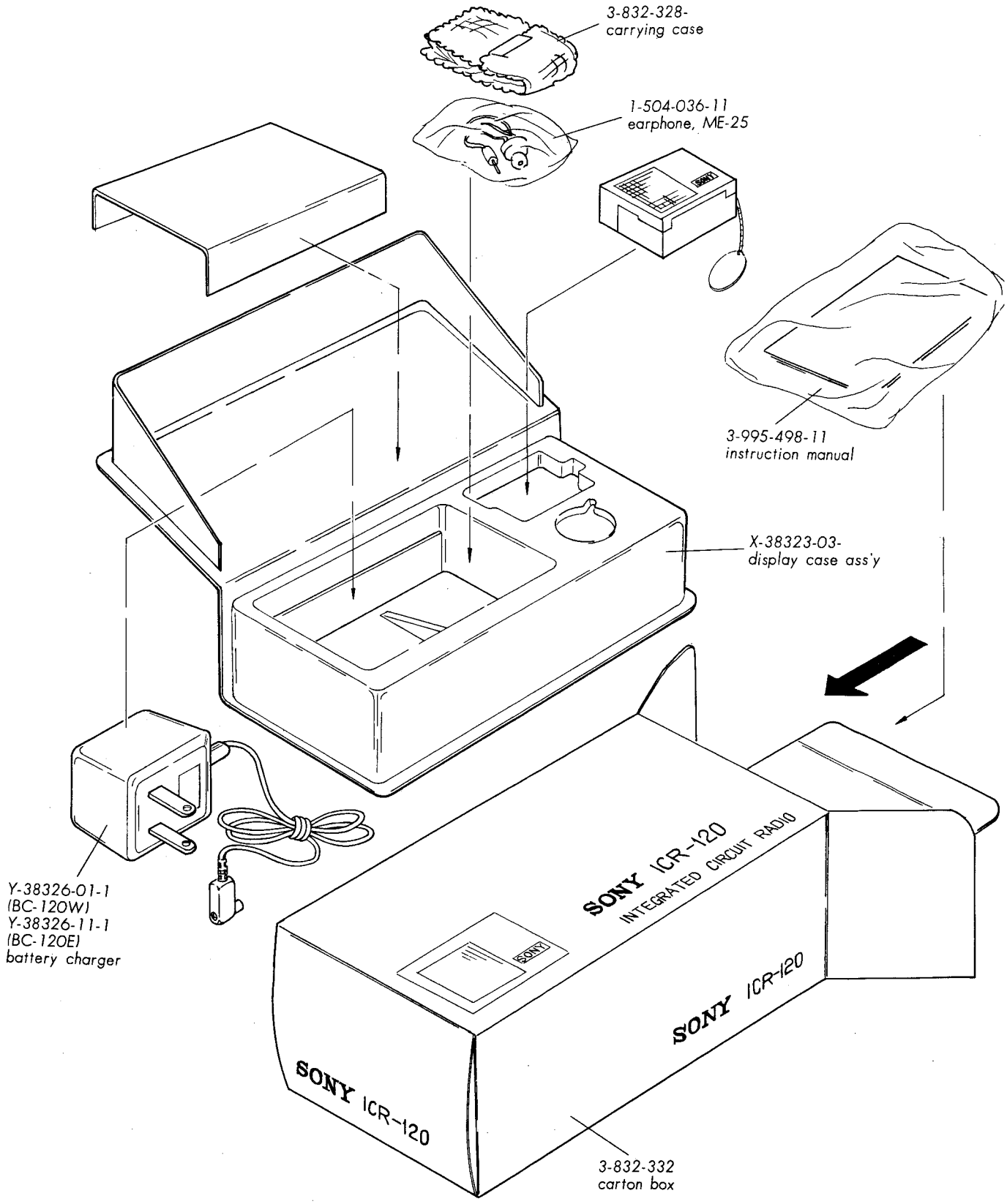
ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description	
		Semiconductors	
IC		IC	BX-201
Q1		transistor	2SC403A
Q2		transistor	2SD187
Q3		transistor	2SB136
D1		diode	1T26
D2		diode	1T26
		Coils and transformers	
L1	1-401-298-	ant. coil, ferrite bar	
L2	1-405-296-	osc. coil	
IFT	1-403-166-	transformer, i-f	
		Miscellaneous	
	1-539-188-11	printed circuit board	
SP	1-502-234-	speaker	
J1	1-507-256-11	jack, earphone	
J2	1-507-257-11	jack, power supply	
S	1-514-278-	switch	
BATT	1-528-030-12	batterly, Ni-cd	
VR	1-222-261-	volume control	
		Resistors	
	Note: 1. All resistor are $^1/_{16}$W, 5% unless otherwise noted.		
	2. Resistors marked with ※ are to be selected in value.		
R1	1-208-092-	300kΩ	ceramic
R2		–discarded–	
※ R3	1-210-378-	24kΩ	micro
	1-210-379-	27kΩ	micro
	1-210-380-	30kΩ	micro
	1-210-381-	33kΩ	micro
R4	1-209-768-	2200Ω	micro
R5	1-209-112-	15kΩ	micro
R6	1-209-766-	1500Ω	micro
R7	1-209-768-	2200Ω	micro
R8	1-209-781-	10kΩ	micro
R9	1-209-365-	390Ω	micro
R10	1-209-355-	100Ω	micro
R11	1-209-104-	510Ω	micro
R12	1-209-102-	150Ω	micro

Ref. No.	Part No.	Description	
※ R13	1-208-069-	33kΩ	ceramic
	1-208-070-	36kΩ	ceramic
	1-208-071-	39kΩ	ceramic
	1-208-072-	43kΩ	ceramic
	1-208-073-	47kΩ	ceramic
	1-208-074-	51kΩ	ceramic
	1-208-075-	56kΩ	ceramic
	1-208-076-	62kΩ	ceramic
	1-208-077-	68kΩ	ceramic
	1-208-078-	75kΩ	ceramic
	1-208-079-	82kΩ	ceramic
	1-208-080-	91kΩ	ceramic
	1-208-081-	100kΩ	ceramic
	1-208-082-	110kΩ	ceramic
	1-208-083-	120kΩ	ceramic
	1-208-084-	130kΩ	ceramic
	1-208-085-	150kΩ	ceramic
R14	1-201-890-	4.7Ω ($^1/_8$W 10%)	composition
		Capacitors	
C1-1, 1-2	1-151-151-	capacitor, tuning	
C2-1, 2-2	1-141-036-	capacitor, trimmer	
C1		–discarded–	
C2		–discarded–	
C3		–discarded–	
C4	1-105-829-12	0.047μF	mylar
C5	1-105-829-12	0.047μF	mylar
C6		–discarded–	
C7		–discarded–	
C8	1-131-140-	4.7μF 10WV	tantalum
C9	1-127-102-	0.047μF 10WV	aluminum
C10	1-105-411-12	0.01μF 35WV	mylar
C11	1-105-411-12	0.01μF 35WV	mylar
C12	1-105-411-12	0.01μF 35WV	mylar
C13	1-131-146-	1μF 16WV	tantalum
C14	1-127-101-	0.1μF 10WV	electrolytic
C15	1-105-821-11	0.001μF 25WV	mylar
C16	1-131-052-	100μF 3WV	tantalum
C17	1-131-051-	30μF 3WV	tantalum
C18	1-103-614-	360pF 50WV	styrol

When ordering replacement parts, you should use PART NUMBER listed on the Parts List or shown in the Exploded View.
The reference number should not be used for ordering purposes.

PACKING



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